



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
NOVEMBER 7, 2000 - 1:30 P.M.
EXECUTIVE CONFERENCE ROOM**

Present:	C. T. Maki C. Roberts J. W. Reincke	G. D. Taylor J. D. O'Doherty T. Fudaly	J. D. Culp T. E. Davies S. Bower
Guests:	J. Ruszkowski M. Frankhouse C. Libiran	M. VanPortFleet C. Bleech J. T. LaVoy	T. Myers D. Couto L. Galehouse

OLD BUSINESS

1. Approval of the Minutes of the October 10, 2000, Meeting - C. T. Maki

Minutes of the October 10, 2000, meeting were approved as written.

2. Bituminous Mixture Selection Guidelines - M. Frankhouse

The updated guidelines were issued after last month's meeting without the proposed revision using Superpave on CPM projects.

Larry Galehouse handed out information illustrating the cost effectiveness of using Superpave mixtures. The increased cost would be about \$1.50/ton and will extend performance life enough to justify the use.

ACTION: The use of Superpave mixtures on appropriate CPM projects is approved. An addendum will be issued adding the Superpave option to the guideline. (To be used mainly on high volume roadways.)

NEW BUSINESS

1. Metric to English Units Conversion Strategy - J. D. Culp

The department received directions from the State Transportation Commission to convert back to English units from metric for contract plans and specifications. A review and summary of items to be converted has begun.

The recommendations were presented as the initial strategy for conversion. The strategy follows an orderly schedule and will not disrupt production. Since the 2001/02 program is nearly all under design, the targeted transition year will be the 2002/03 program.

ACTION: The recommendations are approved and the conversion process will proceed.

2. Pavement Committee Minutes - S. Bower

The minutes of the October 12, 2000, meeting were reviewed and approved for distribution. They will be attached to the November EOC minutes.

3. **Approval of Guidelines for Approval of Experimental Traffic Control Devices/Methods in MDOT Work Zones - T. Myers**

The guidelines provide statewide consistency in the placement, evaluation, and documentation of *experimental* traffic control devices and methods in both construction and maintenance work zones. They allow a step by step evaluation and approval process for new, experimental devices. Following an evaluation period, a final report is submitted to the Traffic Recommendation Committee with recommendations for future use.

ACTION: The guidelines are approved for distribution with some modifications noted. The guidelines will be distributed by an informational memorandum (IM). The Traffic and Safety Division will prepare the IM for Tom Maki and Gary Taylor's signatures.

4. **Pavement Selection - C. Bleech**

A. **I-75 Reconstruction: CS 17034, JN 53932**

The reconstruction alternates considered were a flexible bituminous pavement, Alternate 1, and a jointed plain concrete pavement, Alternate 2.

A life cycle cost analysis (LCAA) was performed and Alternate 1 was approved based on having the lowest Equivalent Uniform Annual Cost. The pavement design and cost analysis summary for Alternate 1 are as follows:

48mm	Bituminous Mix 5E10, Top Course (Mainline & Inside Shoulder)	
63mm	Bituminous Mix 4E10, Leveling Course (Mainline & Inside Shoulder)	
89mm	Bituminous Mix 3E10, Base Course (Mainline)	
140mm	Bituminous Mix 4C & 3C (Outside Shoulder)	
200mm	Aggregate Base (21AA Mod.)(289mm Inside Shoulder & 260mm Outside Shoulder)	
457mm	Existing Sand Subbase	
878mm	Total Thickness	
Present Value Initial Construction Costs		\$214,870/dir. km
Present Value Initial User Costs		\$3,685/dir. km
Present Value Maintenance Costs		\$62,542/dir. km
Equivalent Uniform Annual Cost		\$17,973/kilometer

B. **M-84 Reconstruction: CS 73033, JN 48270**

The reconstruction alternates considered were a flexible bituminous pavement, Alternate 1, and a jointed reinforced concrete pavement, Alternate 2.

An LCAA was performed and Alternate 1 was approved based on having the lowest Equivalent Uniform Annual Cost. The pavement design and cost analysis summary for Alternate 1 are as follows:

38mm	Bituminous Mix 5E3, Top Course
50mm	Bituminous Mix 4E3, Leveling Course
76mm	Bituminous Mix 3E3, Base Course
160mm	Aggregate Base
460mm	Sand Subbase
100mm	Subbase Underdrains
748mm	Total Thickness
Present Value Initial Construction Costs	\$455,369/dir-km
Present Value Initial User Costs	\$8,187/dir-km
Present Value Maintenance Costs	\$140,920/dir-km

Equivalent Uniform Annual Cost	\$38,649/kilometer
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5. The Thompson Scholars Program

Bob Thompson is establishing a program offering five graduate fellowships in the Department of Civil and Environmental Engineering at Michigan State University (MSU) beginning in January 2001. Each fellow will pursue a masters degree and work 20 hours per week on a research project related to bituminous pavement engineering. MDOT may cosponsor the research projects based on interest and the availability of funds through MSU's Pavement Research Center.

It was decided that if proposals are received related to the Thompson Scholars Program, they should be brought to EOC for approval and identification of the funding source.

6. Traffic Recommendations Committee - T. Myers

Tom Myers discussed the operations of the newly formed Traffic Recommendations Committee. Any decisions by the committee will become recommendations to EOC for consideration as policy actions.

(Signed Copy on File at C&T/Secondary)
 Jon W. Reincke, Secretary
 Engineering Operations Committee

JWR:kat

Attachments

cc: EOC Members
 Region Engineers

J. R. DeSana	R. J. Risser, Jr. (MCPA)	L. Stornant	T. L. Nelson
R. J. Lippert, Jr.	A. C. Milo (MRBA)	J. Ruszkowski	R. D. Till
D. L. Smiley	J. Becsey (MAPA)	C. Libiran	M. Frierson
M. Nystrom (AUC)	D. Hollingsworth (MCA)	G. J. Bukoski	C. W. Whiteside
M. Newman (MAA)	J. Steele (FHWA)	K. Rothwell	T. E. Myers
J. Murner (MRPA)			

**Pavement Committee
October 12, 2000 Meeting
Construction & Technology Division Laboratory**

Attending:

Steve Bower - Chair
Mike Frankhouse
John LaVoy
Larry Galehouse

Dave Smiley - Secretary
Paul Steinman (a)
Robert Ranck, Jr.
Ryan Rizzo - FHWA

Rich Ostrowski (a)
Gonzalo Puente

(a) = absent

NOTES: Mark Grazioli represented Rich Ostrowski from the Metro Region. Gary Mayes attended from the Bituminous Unit (C&T). The committee welcomed Gonzalo Puente, who is the new representative from the Local Services Section in Design.

OLD BUSINESS

There was no regular meeting held in September. The August meeting notes were approved by e-mail.

#00-01D Committee Organization

The record notes from each meeting will be reviewed by EOC at their next meeting following the Pavement Committee. The notes will then be distributed with the EOC meeting minutes. Future meeting notes will be reviewed and approved by e-mail. If comments are not received by the secretary within 5 working days after transmittal, they will be considered acceptable.

#00-12D Bituminous Mixture Selection Guidelines

Bob Ranck asked under what circumstances someone could deviate from the guidelines. The guidelines identify contact persons for general questions and requests. Examples of acceptable changes involve mixture selection for ramp surfacing for high traffic volumes, or to match mainline mixtures. Also selection for the CPM program is sometimes confusing. The CPM portion of the guidelines is currently being reviewed by EOC. Typical revisions are made to maintain continuity in surface mixture type and to maintain budget allocations for group categories.

NEW BUSINESS

#00-16D Need to Evaluate Performance of Underdrains

Dave Smiley polled the committee on the need to maintain an investigation project in his work unit that was developed in 1993 to inspect underdrains with a remote camera. The project has had little activity the past several years. The question led to a discussion on the status of current design standards and perceived construction quality. Project results have initiated several improvements to underdrain standards and construction requirements. For instance, there is a provision for the contractor to inspect drains with a camera before acceptance. Also, outlet drains and endings have been upgraded to assure a positive flow occurs. The investigation project will be closed.

#00-17D/P Modification to 34R Underdrain Backfill

The Michigan Aggregate Association (MAA) has requested the department develop an alternate gradation and crushed requirements for 34R because there have been project supply shortages. EOC approved the request at their September meeting. The committee discussed a draft special provision to increase the maximum crushed percentage and allow a #4 nominal size aggregate at 100% crushed which would likely be limestone. Several options were discussed for verifying the aggregate's ability to completely fill the trench to prevent cavities that could allow post-consolidation to occur. The best option presented is to establish a length of trench and do a yield check. The special provision will be completed and sent to MAA for their input. It's intended to use the provision on some trial projects next year.

#00-18D Provision to Sample Behind the Paver

Mike Frankhouse advised the committee that EOC has approved (Oct. meeting) a special provision to collect acceptance samples from behind the paver in lieu of truck sampling. The requirement will be implemented on at least 25 projects next year in all Region/TSC areas. The SP only effects where and how the sample is collected.

#00-19D CPM Program Distribution

Larry Galehouse provided the committee with a summary of actual program costs for each work group by Region for FY 2000. In addition, Larry provided a summary of proposed expenditures for each work group by Region for FY 2001. EOC is currently reviewing the FY 2001 CPM program.

#00-20P Cold-in-Place Recycling for M-65

The Alpena TSC is proposing a cold-in-place recycling project (CS 35012-50719) for 2002 on M-65 south of Hale. The committee reviewed the monitoring plan for the project. Several questions will require resolution before approval can be given. Steve Bower will contact Paul Steinman for their resolution. The revised plan will be reviewed at the November meeting.

#00-21C Shoulder Rumble Strips

Larry Galehouse requested the committee recommend to EOC a location change for the 16" wide grooves (rumble strips) formed in paved shoulders to awake arrant drivers. Currently the grooves are 2' from the shoulder/lane edge line which places them in the wheel track of maintenance vehicles that need to drive the shoulder for inspections and snow plowing. The grooves cause severe vehicle vibration. The Pavement Committee discussed several options that Larry will discuss with the Traffic Recommendations Committee (TRC). Tom Meyers, chair of the TRC, will be submitting a final recommendation to EOC.

Notes:

C = work on item is completed

P = item is still pending additional committee action

D= discussion/information item

DLS: C&T

Approved 11-8-00